

TS 6434 PCTC L A I M S

1. Distance holder for use as a part of an excavating device arranged to generate a stream of an abrasive fluid to be jetted against a geological formation thereby excavating a hole in the geological formation, the
5 distance holder having a wall with a trumpet shaped inner surface section to be facing the geological formation there where it is to be excavated, whereby a recess is formed in the trumpet shaped inner surface section of the wall thereby defining an opening in the trumpet shaped
10 inner surface section to allow the stream of the abrasive fluid to pass from within the recess through the trumpet shaped inner surface section to impact the geological formation, and wherein the recess forms a channel for guiding the stream of the abrasive fluid in the wall
15 essentially parallel to the trumpet shaped inner surface section.

2. Distance holder according to claim 1, wherein the trumpet shaped inner surface converges in a centre area, whereby the opening extends to include the centre area.

20 3. Distance holder according to claim 1 or 2, wherein the opening has an elongate contour.

4. Distance holder according to claims 2 and 3, wherein the elongate contour is elongate in a direction radially outward from the centre area.

25 5. Distance holder according to any one of the previous claims, wherein the recess forms a cavity in said trumpet shaped inner surface section for the abrasive jet stream to pass through.

6. Distance holder according to any one of the previous claims, further comprising a peripheral outer surface section, which is connected to the trumpet shaped inner surface section via a rim area, wherein the opening in the trumpet shaped inner surface extends to the rim area.

7. Distance holder according to claim 6, wherein the rim area is provided with one or more slots for drainage of the abrasive fluid.

8. Distance holder according to claim 7, wherein the one or more slots extend to recesses provided in the peripheral outer surface section.

9. Distance holder according to claim 7 or 8, wherein the opening in the trumpet shaped inner surface extends into one of the one or more slots.

10. Distance holder according to any one of the previous claims, further provided with one or more cutting elements for mechanically cutting into the geological formation.

11. Excavating device for excavating a hole in a geological formation, which excavating device has a proximal end and a distal end formed by the distance holder of any one of the claims 1 to 11, which excavating device further comprises:

- a body rotatable inside the hole along a rotation axis;

- a nozzle arranged on the body to jet a stream of an abrasive fluid onto a surface in the geological formation in order to generate the hole, wherein the stream of the abrasive fluid has at least a radial velocity component and one parallel to the rotation axis; whereby the distance holder is arranged on the body to ensure a predefined distance between the nozzle outlet and the surface in the geological formation and whereby the

nozzle is arranged to discharge in the recess that is formed in the inner surface of the wall of the distance holder.

12. The excavating device of claim 11, wherein the trumpet shaped inner surface of the distance holder converges in a centre area in the axis of rotation, whereby the opening extends to include the centre area.

13. The excavating device of claim 11 or 12, wherein the nozzle discharge direction is substantially parallel to the trumpet shaped inner surface of the distance holder.

14. The excavating device of claim 11, 12, or 13, wherein the opening is an elongate shaped opening of which the direction of elongation is aligned with the discharge direction of the nozzle.

15. Excavating device according to any of claims 11 to 14, wherein the outer surface section of the distance holder is provided with one or more slots for drainage of the abrasive fluid, whereby at least one of the slots is located in the same azimuthal position relative to the excavation device as in which the stream of the abrasive fluid is directed.

16. Excavating device according to claim 15, wherein cutting elements are arranged in the slot on a forward facing side in relation to the direction of rotation.

17. Excavating device according to claim 15 or 16 comprising a separation system for separating abrasive material out of the stream flowing out of the excavating device and recirculating the abrasive material back into the abrasive fluid in the nozzle, wherein the slot is arranged such that the stream flowing out of the excavating device is directed along the separation system.

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